Analyzing the wildland fire management world is complicated. Experienced wildland fire decision-makers are familiar with the number of variables that affect wildland fire decisions and the high degree of uncertainty that accompanies them. To help managers support the fire planning and budget development decisions, FPA uses models to represent the real fire management world.

September 2005

For more information call Venetia Gempler at 208-947-3786 or visit **http://fpa.nifc.gov**

Current Topics:

- *FPA Line Officer and Manager* Orientation Package

Available September 2005 to the Geographic Area FPA Leads for distribution to FPUs. The material will assist in briefing their agency administrators.

The materialsl include:
- Background video (mailed out to GA leads)
- PowerPoint presentations
- FPA glossary
- Key FPA White Papers
- FPU map
- Report titled, *"Developing an Interagency, Landscape-Scale Fire Planning Analysis and Budget Tool"*

FPA Proof of Concept: FPA-PM has been undergoing continuous testing and improvements since its initial release in October, 2004. The testing, while valuable, has been limited to FPA prototypes and team members. Key questions beyond the scope of the prototypes and the FPA team needed to be addressed. Such as, could the system handle the increased workload and associated databases of a larger group? Were the model assumptions correct? What additional system defects would be detected? How would a budget be developed? On recommendation, the Steering Committee expanded the test group and requested a "proof of concept" exercise be conducted.

Thirty-eight Fire Planning Units (FPUs) were selected to demonstrate the "proof of concept" by completing their first analysis run by July 15, 2005 and Budget Development and Delivery (BDD) by August 1, 2005. All 38 FPUs tried to submit an analysis but system deficiencies, data inconsistencies or errors derailed some of the efforts. Some of the 38 FPUs, faced with active wildfire situations, had no other choice than to reprioritize their workload and deal with the ongoing fires. All of the Fire Planning Units are commended for the support they provided. They were given an enormous task in the midst of fire season and most were able to meet the challenging timeframes.

Outcomes from Proof of Concept Testing: Of the 38 FPUs, 27 completed an analysis. Generally, the test confirmed that the system was able to handle the increased workload and databases. Some of the results led to a wide range of interpretations which need to be further clarified. These results ranged widely from the FPU's existing organization and were not what the planning units expected. For FPA team members and the steering committee the results provided valuable information and additional insight into the way the model works.

The July analyses identified a number of defects within FPA-PM. Some of the defects were already known and being addressed while the FPUs were testing the system. These fixes have been included in the latest FPA-PM version release and have had significant positive affect on the results. Since then, some FPUs have rerun their July analyses with the improved code and found the results are more understandable. The table below highlights some of the system concerns or issues and the solutions or actions taken.

Line Officer Orientation

Fire Program Analysis (FPA)
is a new system designed to help wildland fire managers plan and budget a common interagency fire management program at the landscape scale. FPA will display how well the fire management program achieves land management goals and objectives at different cost levels.

FPA Software Updates

PCHA version 1.2.31 Patch 1a
Improvements to PCHA have incorporated a stochastic fire event scenario which will display a better representation of the FPUs range of potential fire seasons.

FPA-PM version 1.4
Scheduled for release on October 15, 2005 - this version will be used by all FPUs for the 2008 budget development.

TechNews Is a technical newsletter developed to provide detailed information and updates regarding the software used in FPA.

The FPA Organization

The Core Team
is an interagency group incorporating wildland fire management concepts, goals and objectives into the design of the FPA modules. They interface with the

Concerns/Issues	Solutions/Actions
Too many existing fire resources get replaced with new “high production” resources.	This issue has seen significant improvement with the release of the new optimization code. It appears to be resolved.
A system bias toward Type 4 Engines with 5 person staffing, and Type 2 Helicopters with staffing of 21.	This issue is still being reviewed. Some changes in the software have been made and further testing is underway. Specifically, there were some changes made in the engine lookup data. Also, there are known defects in how costs are accumulated, particularly with helicopter deployments.
Some very high rates of spread generated in the fire event scenario.	This issue is still under review. There are several different possibilities to explain the problem. One seems to relate to the FPU selection of fuel types. Another is a tendency for the BEHAVE model to over predict fire behavior. Weather data supplied to the FPA-HA model could also be a factor.
Relocation, and often concentration, of fire resources at just a few dispatch locations.	Concentration of resources at a few locations may be expected. The optimization model looks for the dispatch location that can maximize weighted acres managed per fire management unit workload point. Because the system is “blind” to the surrounding FPUs it tends to select interior dispatch locations to model. This is particularly obvious when the shape of the FPU is long and narrow. Facility capacity is defined and input by the FPU. If (large) facility capacity is available at the most used dispatch locations, relocation (and concentration) of resources should be expected. FPUs have the capability to reassign resources
Solutions that indicate significant realignment of fire resource ownership among the FPU partners.	Part of this issue relates to the answer above. It is also possible that from a purely economic point of view, that a realignment of resources may be appropriate. FPUs have the capability to reassign resources
Unexplained replication of loaned or non-budgeted fire resources.	A software fix eliminates this issue. Members of the Core team are conducting further testing to verify that the problem has been eliminated.
Low percentage of contained fires in the optimal solution.	The measure of effectiveness for FPA is weighted acres managed, not percent of fires contained, so this result is not unexpected. Containment in FPA is within 18 hours and not the various other metrics (i.e. 48 hours; 300 acres) Also, the containment results are in the model, not the real world. All the fires have characteristics developed in the fire event scenario. With all the assumptions and limitations inherent in the model, the fires themselves are not identical to those seen in the real world.
How the results could be interpreted to meet the needs of local agency administrators.	It is critical that agency administrators be kept informed to increase their knowledge of the program and the implications of analysis results. Model world versus real world.

Implementation Coordination Group and coordinate with the contractor on developing the analysis software for FPA modules.

The Implementation Coordination Group (ICG) is the liaison to the agency field units. They provide feedback to the Core Team and Steering Committee regarding implementation of FPA, and they are the subject matter experts assisting the FPA application Help Desk. They have also developed Phase 1 user and reference guides, training materials and courses, and the review and certification of the FPA process.

The Steering Committee manages the project and provides guidance and direction.

- Steve Botti, National Park Service
- Lyle Carlile, Bureau of Indian Affairs
- Brian McManus, U.S. Fish and Wildlife Service
- Aden Seidlitz and Lynne Willoughby, Bureau of Land Management
- Bill Breedlove U.S.D.A Forest Service
- Keith Smith National Association of State Foresters

Budget Development and Delivery (BDD): Since FPA-PM only addresses the initial response resources of the Preparedness budget, the Budget Delivery and Development module was created to display the entire preparedness costs for budget submission. Those costs include prevention, extended response and large fire resources.

The original intent of the BDD module was to capture state/regional and national budget needs and roll-up the national preparedness budget. As it has evolved, BDD is now the tool FPUs and state/regional and national offices will use to display all the wildland fire management preparedness costs for the 2008 wildland fire budget development.

For the prototype effort, the BDD process was not automated. FPUs entered the information into an Excel spreadsheet and submitted it to FPA's Implementation Coordination Group. To complete the complex spreadsheet, lengthy and complex instructions were developed which led to a wide range of interpretation. However, for the FPA Steering Committee, the BDD exercise highlighted numerous important issues to be resolved.

Efforts are underway to streamline the BDD process and provide a simpler and more accurate process to display different cost limits. When BDD version 1.0 is launched November 15, 2005, the BDD function will use information directly from the FPA-PM analysis and minimize the need to re-enter large amounts of data.

Remember, FPA-PM only addresses the initial response portion of the Preparedness budget. Phase 1 forms the basis for the preparedness national curve showing the level of effectiveness that can be obtained relative to a given budget. Until the entire FPA system is completed other wildland fire management preparedness costs will be added through the BDD feature.

FPA Training Fall 2005: All FPA fall training sessions are full and the nominees have been notified.

GS-401 credit equivalency: FPA-PM training has been accepted by the Interagency Fire Program Management committee as qualifying for GS-401 credit equivalency. The course has been added to IQCS under course code N9021. Students who successfully completed both FPA-HA and FPA-PM between October 2004 and June 2005 should provide their agency training officer a copy of their course certificates as documentation of course completion for inclusion of the student's training in the IQCS data base

Upcoming FPA Deadlines

October 1, 2005 - FPU boundaries and Charters finalized for FY 2006
October 15, 2005 – FPA-PM version 1.3.2 software release
November 15, 2005 - BDD version 1.0 release
November 15, 2005 – Approximately 2/3 of the FPUs will complete the analysis. Please note: If this submission, including BDD, is certified and Line Officer approved, this analysis may also be used as the February 15, 2006 analysis.
February 15, 2006 – All FPU's must complete the analysis and BDD. Submission must be certified and Line Officer approved before sending to each agency's Regional/State Office.
March 1, 2006 – All Regional and State Offices must complete BDD.